

REMARKS/ARGUMENTS

This Amendment is being filed in response to the Office Action dated January 8, 2009. Reconsideration and allowance of the application in view of the amendments made above and the remarks to follow are respectfully requested.

Claims 1-19 are pending in the Application. Claims 18 and 19 are added by this amendment. By means of the present amendment, claims 1-17 are amended including for better conformance to U.S. practice, such as deleting reference numerals typically used in European practice that are known to not limit the scope of the claims. Further amendments include amending dependent claims to begin with "The" as opposed to "A" and correcting certain informalities noted upon review of the claims. By these amendments, claims 1-17 are not amended to address issues of patentability and Applicants respectfully reserve all rights under the Doctrine of Equivalents. Applicants furthermore reserve the right to reintroduce subject matter deleted herein at a later time during the prosecution of this application or continuing applications.

Applicants thank the Examiner for acknowledging the claim for priority and receipt of certified copies of all the priority document(s).

Applicants thank the Examiner for acknowledging receipt and consideration of Information Disclosure Statements filed on June 21, 2006 and June 1, 2007.

In the Office Action, the drawings are objected. In response, FIG. 2 is amended as requested. A replacement sheet including FIGs. 1 and 2 is enclosed. Applicants respectfully request approval of the enclosed proposed drawing change and withdrawal of the drawing objection.

In the Office Action, claims 7 and 16 are objected to for informalities. In the interest of advancing consideration and allowance of the claims, the Applicants have elected to amend claims 7 and 16 in accordance with the Examiner's suggestions. Accordingly, withdrawal of the objection to claims 7 and 16 is respectfully requested.

Claim 10 is rejected under 35 U.S.C. §112, second paragraph as allegedly being indefinite. In the interest of advancing consideration and allowance of the claims, the Applicants have

elected to amend claim 10 in accordance with the Examiner's suggestions. Accordingly, it is respectfully submitted that claim 10 is in proper form and it is respectfully requested that this rejection under 35 U.S.C. §112, second paragraph, be withdrawn.

In the Office Action, claims 1-6, 7, 9-12, and 15-17 are rejected under 35 U.S.C. §103(a) over U.S. Patent Publication No. 2003/0127676 to Redecker ("Redecker") and U.S. Patent No. 6,815,711 to Geens ("Geens"). Claims 6 and 8 are rejected under 35 U.S.C. §103(a) over Redecker and Geens in further view of U.S. Patent Publication No. 2005/0151176 to Gudesen ("Gudesen"). Claims 13 and 14 are rejected under 35 U.S.C. §103(a) over Redecker and Geens in further view of U.S. Patent No. 6,905,906 to Sirringhaus ("Sirringhaus"). These rejections are respectfully traversed. It is respectfully submitted that claims 1-19 are allowable over Redecker and Geens alone and in view of any combination of Gudesen and Sirringhaus for at least the following reasons.

Redecker is directed to a non-volatile memory device having an active layer formed of an organic semiconductor in a contact region between a source and a drain and a gate-insulating layer formed of a ferroelectric material on the active layer, and the gate is

formed on the gate-insulating layer (see, Redecker, abstract). As described in paragraph [0023] of Redecker, the organic semiconductor active layer 2 forms a source-drain channel.

Redecker is discussed at page 3, line 14 to page 4, line 6 of the present patent application and is distinguished from the presently claimed subject matter as having a unipolar organic semiconductor active layer 2 that functions in accumulation or depletion but not in inversion. The discussion further explains the deficiencies and illustratively discusses the numerous differences of the Redecker device.

It is undisputed that Redecker does not disclose or suggest that its organic semiconductor active layer 2 is ambipolar (See, Office Action, page 4, section 10.) Geens is cited to provide that which is admitted missing from Redecker, however, it is respectfully submitted that reliance on Geens is misplaced.

Geens, at col. 2, lines 44-46 cited in the Office Action states the following:

a network of organic molecules providing high balanced mobility values for holes and electrons combined to single top contacts for low-cost large scale organic ambipolar transistor productions would be beneficial in the technology.

However, any teaching or suggestion of using organic ambipolar semiconductor and ferroelectric layers at least partially in contact with each other to form a nonvolatile memory device is absent. In fact, no reference to any such description is provided in the Office Action.

It is respectfully submitted that the non-volatile memory device of claim 1 is not anticipated or made obvious by the teachings of Redecker and Geens. For example, Redecker and Geens does not teach, disclose or suggest, a non-volatile memory device that amongst other patentable elements, comprises "an organic ambipolar semiconductor layer; and an organic ferroelectric layer, said organic ambipolar semiconductor layer and said organic ferroelectric layer being at least partially in contact with each other" as recited in claim 1, and as similarly recited in claim 17.

An example of this memory device is illustrated in FIG. 7 of the present application. As illustrated, the organic ambipolar semiconductor layer 19 is placed over the source 17 and drain 18 electrodes and the organic ferroelectric layer such that the organic ambipolar and ferroelectric layers are at least partially in contact with each other.

The Office Action has not provided any evidence that substitution of organic ambipolar semiconductor material mentioned in Geens for the organic semiconductor layer of the Redecker device will produce a predictable result, namely of a working memory device. The mere mention of the organic ambipolar semiconductor in Geens does not render claims 1 and 17 obvious. Moreover, the mere statement in the Office Action that combining Redecker and Geens will be obvious to those skilled in the art does not make it so. It is respectfully submitted that the mere mention of Geens of organic ambipolar semiconductor material is insufficient to yield a predictable result to provide a suggestion to combine Redecker with Geens.

New claim 18 recites "an organic ambipolar semiconductor layer in contact with three sides of said first and second electrodes. In Redecker, the organic semiconductor active layer 2 touches only one side of the source 4 or the drain 3. Further, claim 18 recites "an organic ferroelectric layer in contact with ... at least two sides of said control electrode and at least partially in contact with said organic ambipolar semiconductor layer." In Redecker, the

ferroelectric gate-insulating layer 5 touches only one side of the gate 6.

Each of Gudesen and Sirringhaus are introduced for allegedly showing elements of the dependent claims and as such, do nothing to cure the deficiencies in each of Redecker and Geens.

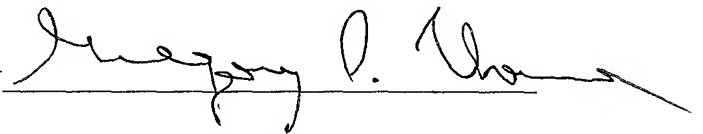
Based on the foregoing, the Applicants respectfully submit that independent claims 1, 17 and 18 are patentable over Redecker and Geens and notice to this effect is earnestly solicited. Claims 2-16 and 19 respectively depend from one of claims 1 and 18 and accordingly are allowable for at least this reason as well as for the separately patentable elements contained in each of the claims. Accordingly, separate consideration of each of the dependent claims is respectfully requested.

In addition, Applicants deny any statement, position or averment of the Examiner that is not specifically addressed by the foregoing argument and response. Any rejections and/or points of argument not addressed would appear to be moot in view of the presented remarks. However, the Applicants reserve the right to submit further arguments in support of the above stated position,

should that become necessary. No arguments are waived and none of the Examiner's statements are conceded.

Applicants have made a diligent and sincere effort to place this application in condition for immediate allowance and notice to this effect is earnestly solicited.

Respectfully submitted,

By 

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Enclosure: Replacement drawing sheet (1 sheet including FIG. 2)

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